

By RUSSELL D. HOFFMAN

1) Isn't France almost entirely dependent on nuclear power?

Sure, they have something between 70% and 80% nuke-generated electricity (the exact figure depends on who you ask). It's NOT particularly CHEAP for the French, by the way, and THAT should tell you something. But more to the point, COULD they have gone with renewables and still achieved their electricity goals (and their rates would now be vastly cheaper)? Certainly!

From wave power off the coast of Brittany to in-stream and small-scale hydro in the French Alps and the Pyrennes (and five other mountain regions in France), and bio-fuels, sunshine, and wind everywhere, and lousy conservation standards to begin with, there is no question France could get along without nukes entirely, as could anyone else. France has used extraordinary measures to stop the so-called "anti-nuclear" (I call it the Pro-DNA) viewpoint from being heard. And one more point: AREVA, France's nuke power company, is even more secretive than our nuke mega-corporations, and their nukes have had serious problems which could have, with a little different luck, resulted in meltdowns. And AREVA buys up wind power and other clean energy companies all over the world, yet remain focused on nuclear!

2) Don't nuclear submarines prove the technology works?

Even if every nuclear submarine worked perfectly (they don't), the spent fuel from nuclear subs and other military nuclear vessels adds about 30% to the world's nuclear waste stream. The United States has launched nearly 200 nuclear submarines, but the reactors actually charge batteries, which power electrical motors, the same as on the old diesel subs. Staying submerged for months at a time, while theoretically possible, is seldom done and of little practical value in today's military threat scenarios.

Whenever we lose a nuke-powered sub (and it's happened twice to us, and about half a dozen times to the Russians) we lose the reactors and their radioactive fuel, to be dispersed into the waters. The Kursk's reactors were reportedly recovered (though undoubtedly, the highly radioactive cooling fluid was dispersed), but I don't think ANY other lost sub reactors have been recovered. Plus, Russia has hundreds of rusting subs that are releasing radioactive and other poisons into the oceans and will do so at ever-increasing rates unless WE somehow force the Russians to clean them up and remove them from the water. Russia's already proven they won't do it themselves.

Plus, at least in America, ex-nuke-submariners think they are ENTITLED to a job in a civilian nuke plant when they quit the service after securing a pension and life-time health benefits (such as they are) from the Navy. And there is good reason to believe the scuttlebutt that is rampant about ex-nuke-submariners dying of brain tumors and the like at MUCH higher rates than the rest of the population. THAT is their true sacrifice, but their promotion of nuclear power is by far the most damaging thing they have done (considering, for example, that they have never launched a single nuclear weapon at an enemy (thank goodness)).

3) Nukes are getting safer all the time, aren't they?

Actually, they are getting LESS safe. They are getting older, and the crews that run them didn't build them and haven't looked at the original plans even once in their lives. Any specific nuclear power plant is way too complex for any one person to understand, and their training is too specific, anyway. So one "expert" really just knows a piece of the puzzle, and leans on other experts to "solve" the whole puzzle for humanity, and excuse their own dirty part of the whole dirty job. Thus they convince themselves that nukes are safe and low levels of radiation might even be (in their opinion) GOOD FOR YOU. The old nuke power plants are rusting, becoming more and more embrittled, and parts that have lasted for 30+ years (and were designed to last only 20) are failing left and right. The companies all have a "replace on failure" policy for most components, since it would be impossible to guess what's going to break next. And as for future possible generations of new reactors, they have their own problems

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INCLUDING unexpectedly rapid embrittlement of the cladding for the radioactive fuel pellets, which could lead to the very catastrophic failures they CLAIM can't happen. AND the new reactors are no better protected from terrorism than the old ones -- a fact of life, but then, so are TSUNAMIS and they are IGNORED, as well (yes, some coastal reactors have sea walls, but they are pitifully small).

4) Can't nuclear power solve the problem of Global warming?

No. First of all, nuclear power doesn't produce MUCH of our energy mix. Only about 7% of America's energy usage is from nukes, if even that (it depends, of course, on how you measure it). The "20%" figure you might often hear is the percentage of ELECTRICITY nuclear produces, but electricity is a relatively small portion of our total energy usage.

Second of all, the global warming problem is (finally) considered IMMINENT. But no workable plan for building new nuclear power plants can possibly contribute more than a small percentage of the needed energy. The plants are too big, the lead time too long, the difficulties of siting them away from population centers and then running high-power lines, all doom the technology even if numerous OTHER important reasons are IGNORED!

Third, and most damaging, is that when you take into account: Caring for the nuclear waste afterwards; Caring for cancer victims; The energy needed to mine the uranium; The energy needed to clean up after an accident; All the other costs; Nuclear simply doesn't produce ANY net energy for the country! Not one watt!

So how can it solve the global warming problem?

5) What exactly IS radiation and how does it harm us?

Every element in the universe is made of atoms, and every atom is made of protons and neutrons in the core, then lots of empty space, with the tiny little electrons spinning around the outer edges. The number of protons determines what element something is. Except for hydrogen, which has a lone proton and can have zero neutrons, there are one or more neutrons in the core of each atom. Every element can have several different numbers of neutrons (called different isotopes of an element), but as long as the number of protons stays the same, it's the same element -- with the same chemical and biological behavior as any other atom of that element. All elements above and including element 86 have NO possible stable number of neutrons in their core, meaning, all isotopes of these elements are radioactive. Element 43, which doesn't exist naturally on Earth, also has no stable isotopes.

Unstable atoms decay, which means they break down into a stable isotope of some element, or into another unstable isotope of some element. For any particular atom, there is no way to predict WHEN it will decay, but for large aggregates of the same isotope of the same element, the decay rates of the whole group are approximately predictable. The "half-life" is defined as the amount of time it takes for half the atoms to decay, in repeated tests of carefully measured, pure samples of an isotope. It is important to understand that the OTHER half of the sample will then take the SAME amount of time for HALF of THOSE atoms to decay. Thus, after about 20 half-lives, still about a millionth of the radioactive isotope will remain, along with a dirty little rainbow of daughter products, each decaying their way around the periodic table, in big and small leaps, stopping only when they become stable elements such as lead.

The moment of decay is of particular interest, because various particles and / or rays shoot out from the decaying atom, damaging other atoms. For example, a NEW electron can be ejected from the core of an atom, simultaneously changing one of the core's neutrons into a proton and converting the atom into the next element UP in the Periodic Table of the Elements. (For example, converting an radioactive isotope of hydrogen (element 1) that has two neutrons and one proton, into a stable isotope of helium (element 2) with one neutron and two protons.) The ejected NEW electron may be traveling as much as ~95% the speed of

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light when it is ejected. It is called a beta particle (sometimes it's called a beta ray). Another type of radioactive decay shoots off TWO protons and TWO neutrons in one clump -- which is called an alpha particle (sometimes it's called an alpha ray) and is ejected with as much as ~5% the speed of light. Still other types of radioactive decays shoot off high energy photons, which are called gamma rays or x-rays. Some radioactive decays shoot off gamma rays along with beta particles or alpha particles.

It is mainly the shooting particles or energy rays that do the damage to biological systems. Your body is made of highly complex molecules -- in fact, the truest wonder of life is that it is so very, very complex. The most complex molecule known, the biggest, most intricate, most amazing molecule of all (a triple crown of molecular development) is YOUR DNA, and you have trillions of copies of it, and EACH ONE needs to remain exactly the same as all the others. No easy trick with RADIATION around! But it's not just your DNA that needs to be protected. Each of the 50,000+ DIFFERENT kinds of molecules your body manufactures for its own use all need to be protected, too. Many of the molecules your body makes are thousands of individual atoms in size, and if any ONE of those atoms is damaged, the molecule is ruined. Information -- perhaps vital information -- is lost.

Radioactive decays are thousands of times STRONGER than the CHEMICAL and ELECTRICAL BONDS which hold your body's various molecular structures together. When a radioactive decay occurs it can destroy thousands of proteins your body carefully created, or it can damage the RNA -- the creators of those proteins -- or it can damage a copy of the DNA chain itself.

It is now absolutely certain and well-known that radiation causes cancer, leukemia, heart disease, birth defects, and thousands of other ailments. Recently, even some official regulatory bodies have accepted the theory that there is NO THRESHOLD below which radiation is not damaging and CANNOT cause "health effects."

But the RATE of health effects in the population, and the degree to which a general degradation of YOUR body should be considered a problem (even if it doesn't kill you outright) is the subject of cover-ups, lies, debates, pseudo-debates, and a thousand other tricks, trials, and tribulations.

6) Won't Yucca Mountain solve the nuclear waste problem?

Or couldn't we just rocket it to the sun? No, neither solution is adequate. Yucca Mountain is a scientific boondoggle AND at least 15 to 20 years away if it ever opens. The problem is simple to state, but very hard to solve: How can you build a device which will successfully contain something for millions of years, when the thing you wish to contain can destroy any container you build to contain it? Radioactive decays destroy steel, diamond, gold, glass, every alloy known or conceived by physicists and chemists, and -- of course -- radioactive decays destroy all biological systems.

The rocket solution is STILL brought up TIME AND AGAIN by otherwise-sane "rocket scientists" and their promoters. But it's a lousy idea because rockets fail WAY too often, including because of prior rocket failure's high-speed, microscopic, deadly SPACE DEBRIS in Near Earth Orbit, which the waste would have to successfully pass through. Also, there is WAY too much nuclear waste to expect much of it to get "up there" safely before a truly catastrophic accident occurs, not "vaporizing" (as in "rendering harmless through the process of incineration") but "particle-izing" the waste ("going particulate" is the actual technical expression). Why does such a lousy idea keep coming up then? Because rationally, all OTHER choices have ALSO failed to pass scientific muster.

Besides, Yucca Mountain, even if built would not be nearly big enough for all the waste we will generate in the coming decades, it's barely going to be big enough to hold the current amount we already have!

7) Science will surely cure cancer some day, and isn't that the main danger from radiation?

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First of all: DON'T bet YOUR life that science will cure cancer any time soon! Most "progress" has been in identifying cancers early, and identifying environmental risks you CAN individually address. Many laws, in fact, which PURPORT to protect us from CARCINOGENS specifically exclude the regulation of RADIOACTIVE carcinogenic substances!

There are thousands of different kinds of cancers that have been identified and further sub-categories are being discovered all the time. Cancer research is alive and well (and needs more funding). But its successes have been few.

Second of all, cancer ISN'T the only disease radiation CAUSES or ENHANCES, because radiation causes the random destruction of your body's sub-cellular structure, and the creation of thousands -- or even hundreds of thousands -- of "free radicals" with EVERY atomic breakdown. Understanding how radiation impacts cells is closer to the root of the problem than merely declaring that radiation causes specific cancers, such as "thyroid cancer" and then handing out KI (Potassium Iodide) after an accident. Science isn't anywhere near solving any of the THOUSANDS of diseases associated with free radical creation in your body.

DNA damage to multiple (future) generations is a bigger threat to civilization than the combined radiation-induced threats from cancer, heart disease, leukemia, and every other radiation-induced ailment combined! And there is no pill that protects your fetus. Mothers and fathers of the world MUST understand this: Radiation sickens, weakens, and kills YOUR babies! It makes them less like you, and it makes them like you less.

8) Doesn't the nuclear industry protect humans from all its radioactive waste?

NO THEY DON'T! Tritium, for instance, is routinely released from ALL operating nuclear power plants. Some kinds of nuke plants release 20 times (or more) more than other types. Is it ALL okay? Not at all. Tritium standards are absurdly lax. For example, in America the Environmental Protection Agency standard for drinking water is 20,000 picoCuries of tritium per liter. But if you drank water at this level consistently (and you might be doing so right now and not even know it), the water portion of YOUR body would also reach this level, and your body will silently experience tens of thousands of ADDITIONAL radioactive decays every second of your life, above and beyond all your OTHER EXPOSURES. These additional radioactive decays will EACH create thousands of "free-radicals" (which can damage your DNA) or they might damage your DNA directly. Sounds bad? Of course it is -- but the EPA basically feels that it's bad ONLY above 20,000 picoCuries per liter and PERFECTLY OKAY below that! A more realistic figure, that would probably merely bring the protection standard in line with that of other chemical assaults we must invariably put up with (engine fumes, coal power plant fumes (see below) etc.), might be 50 picoCuries per liter -- or maybe 5.

But 20,000 picoCuries per liter of drinking water is just ABSURDLY HIGH and allows U.S. nuclear power plants to release about 1,000 Curies of tritium each year, on average. Any year they release more is forgiven and averaged into prior years, if possible, or future years, if prior releases exceeded even the standard "forgiveness" rate. Get it? No matter what they release, it's simply duly noted (but the information is seldom released to the public) and the regulatory toadies forgive the nuclear industry for their trespass into YOUR life.

9) Isn't our other choice coal, and isn't that even worse?

Coal is pretty bad stuff -- and there's 500 years' worth in the earth, laying around the planet waiting to be mined, whereas there is probably less than FIFTY years' worth of uranium!

Coal plants emit Uranium and Thorium -- radioactive heavy metals -- into the atmosphere in quantities MUCH greater than a properly operating nuclear power plant does. BUT -- and this is a BIG, BIG, BUT -- they DON'T create or release FISSION PRODUCTS in comparable quantities. Fission products -- the daughter elements of atomic decay -- include cesium, strontium, and a deadly rainbow of other radioactive elements, which are created when the radioactive fuel is

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"burned" in the reactor. These elements get into biological systems in a way that heavy metals generally don't do (although heavy metals are very bad). Fission products BIOACCUMULATE in plants and animals which we then eat. Many fission products are chemically similar to elements that are essential for life. Therefore our bodies readily absorb fission products at specific sites such as our thyroids, gonads, bone marrow, and other organs.

Additionally, a coal-fired power plant will never be the target of a serious terrorist who is intent on doing the most harm for his or her "investment." A coal-fired plant will not leave extremely toxic waste -- the word "extremely" being key here. A coal-fired plant creates waste, and it is unhealthy -- both the part which is released into the atmosphere AND the part that isn't. BUT these waste streams pale in comparison to a nuclear power plant's. As proof, just consider what the major fear is from coal, according to all the politicians in Washington these days, and everyone else besides: CARBON DIOXIDE! NOT the heavy metals or even the URANIUM that is also released by coal-fired power plants! In truth, it would be GOOD to reduce ALL emissions from coal plants. But hasn't CARBON SEQUESTRATION been proven to work -- its ONLY REAL PROBLEM is that it REDUCES THE EFFICIENCY of the coal plant -- so you burn MORE coal to get the SAME POWER OUTPUT?

Or is there ANOTHER CHOICE? You bet there is! Solar energy works. Wind power WORKS. Wave energy, tide energy, in-stream river power (no dams) -- these ALL work. Yes, I would rather see a hundred coal plants be built than the 30 or so nukes that could produce the same electrical output, BUT those are NOT the real choices.

10) Don't some people say that a little radiation might actually be GOOD for you?

Hmmm... WHO have you been picking this stuff up from? Ask yourself that. The only people I've ever found who actually believe that the debris from, for example, a 1963 NASA nuclear space probe, which dispersed plutonium all over the world, is like a VITAMIN to our bodies are invariably directly associated with USING RADIOACTIVE SUBSTANCES IN THEIR WORK. In other words, their jobs depend on the public believing that low levels of radiation is probably HARMLESS, and may even actually be GOOD for you.

In reality, NO level of radiation is beneficial and all medical radiation is given after a supposedly careful cost-benefit analysis has been done for the patient. In other words, the risk of getting cancer from a USELESS and UNNECESSARY CT scan is utterly unfair: That same risk from a CT SCAN that resulted from a proper initial diagnosis, is fair, regardless of whether a tumor is actually found in any individual case.

When your regular dentist uses their x-ray equipment as part of your regular check-up, that's considered a "fair use." (I would argue that the equipment is much more ionizing than it needs to be.) But when the dentist sends you to another expert, and that expert takes NEW x-rays of the same tooth, from the same angle, rather than using your dentist's original x-rays, that's an UNFAIR use, but it happens ALL THE TIME.

Some people get cancer because of dental x-rays, but it's considered okay, not because dentists pretend it doesn't happen (though some do, in fact, do that), but because the dentists believe that, for the population at large, the benefits outweigh the dangers.

But what if low-level radiation (LLR) is significantly WORSE than calculated by the "experts," who, invariably, base their guesstimates of the danger on faulty HIROSHIMA and NAGASAKI bomb studies of people who have been called the "healthy survivors" by more realistic observers?

(Note: Males in the northern hemisphere are said to piss out about a million atoms of plutonium every DAY of their LIVES, mostly Pu-238 (with a half-life of about 87.75 years), just from that one 1963 NASA space probe accident (let alone all the other poisons we must ingest). The chance of getting bladder cancer is about one in 30 for American men (it's about one in 90 for American women). Some portion of that is undoubtedly due to radioactive poisons.)

11) Aren't we desperate for energy?

Yes, we ABSOLUTELY are desperate for energy. CLEAN energy.

Every study ever done has shown that as populations get more and cheaper, CLEANER energy, they achieve an improvement in living standards "across the board." Death rates go down, disease rates go down, birth rates even go down -- as babies live to age five and beyond, families tend to have LESS children, not MORE! Cheap, clean energy allows the FREE EXCHANGE OF IDEAS via the Internet and cheap exchange of goods via every other transportation method. As living standards go up, the environmental degradation that occurs per human life goes DOWN because people don't, for example, have to burn down trees for cooking or for heat when electric stoves and heaters powered by renewable energy are available instead. The environmental benefits continue to increase as the available cheap, clean energy increases, until / unless the society reaches a certain "critical" level of affluence and misbehavior, and does not properly REGULATE itself (such as by having gas-powered lawn trimming devices, when electric, renewable-energy-powered devices could be used instead.)

PROPER energy regulation IS the key to success! But you can't have proper regulation if government dishonestly, ignorantly, and stubbornly supports nuclear power, against all logic and reason.

12) What about reprocessing? Can't we just "recycle" the waste?

Reprocessing is nothing like recycling aluminum cans!! It's a filthy process that Jimmy Carter banned when he was president, and it should STAY banned. It involves grinding up hot, poisonous nuclear reactor cores and spilling a little at every step. The process gobbles up enormous amounts of energy, and uses up enormous amounts of chemicals that are spilled into the environment along with many of the "fission products" which "poison" the reactor cores. What they want is the mainly unspent U-235, and a few other isotopes of Uranium and Plutonium, especially Pu-239. What they DON'T want is a rainbow of radioactive isotopes of every element in the Periodic Table -- but it's what they've got. So, France, which currently reprocesses reactor cores, pours enormous amounts of radioactive and chemical waste into the North Sea (as do several other countries) and that waste is then spread throughout the planet. THAT's their idea of "reprocessing" nuclear waste, and they want to bring this awful concept to America in the form of something called GNEP, which stands for Global Nuclear Energy Partnership because America will be the cesspool of the planet, accepting nuclear waste from anywhere. (Transported, usually, by boats, which will sometimes be lost at sea -- guaranteed.)

But the WORST thing about reprocessing the "waste" from nuclear reactors is that you can ALSO separate out some isotopes which can be used in DIRTY BOMBS, and in -- you guessed it -- ATOMIC BOMBS.

13) Are nuclear power plants responsible for nuclear weapons proliferation?

One can start with the simple fact that WITHOUT NUCLEAR POWER PLANTS, THERE WOULD BE NO NUCLEAR WEAPONS. Hydrogen bombs all use tritium in addition to plutonium and / or uranium, and both the plutonium and the tritium always come from nuclear power plants. Tritium has a half-life of about 12.3 years. You need to keep making more tritium or, after a batch has decayed to too low a grade to be useful, you have to remove it from your nuclear warhead and re-isolate the tritium isotopes you have left over. But you won't be able to refuel as many warheads as before, if you aren't making more tritium.

The main plutonium isotope needed for nuclear bombs is Pu-239, which is ONLY created in nuclear reactors. If you don't isolate it from other plutonium isotopes, it's pretty much USELESS as bomb-making material. If you let it decay for a few years, it ALSO becomes useless as bomb-making material until it has been reprocessed.

So if you want to remove nuclear weapons from the face of the earth, you MUST

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shut down the reprocessing plants, which are enormous and dirty death-machines which specialize in Weapons of Mass Destruction, AND the nuclear power plants, where many of the raw materials that can be turned into nuclear weapons are made.

14) Why does the industry keep going, if it's SO bad?

I dunno. Why DOES murder-for-hire keep happening, since it's SO bad? why does war keep happening?

The nuclear industry relies on lies and obfuscations to hide its true effect on humanity from curious or prying eyes. ANYONE who begins to understand the truth is immediately labeled an "activist" even if they base every comment they ever make on scientific principles which the pro-nukers cannot and WILL NOT ANSWER. People who are labeled "activists" are soon kicked out of their jobs, so that they can no longer be considered experts who are current in the field. They are ridiculed, and destroyed financially.

The "debate" over nuclear power -- the one a democratic people SHOULD have had -- NEVER HAPPENED, and next thing we knew, there were more than 100 operating nuclear power plants in America alone. One that was gutted by fire more than 30 years ago, on March 22, 1975 (and nearly melted down, but didn't, or you would know its name) was reconstructed and restarted recently (June 2007). How? Because the Tennessee Valley Authority, which owns the Browns Ferry site, is as corrupt an organization as you will find on the face of the earth.

What keeps the industry going is government contracts, government subsidies, government insurance, and tax breaks. The government feeds BILLIONS into the industry, financing the "research and development" of new reactor designs, and the training the commercial reactor operators through the military reactor program. Research reactor institutes are often controlled jointly by the industry and by the government. It's self-perpetuating.

But the biggest break the industry gets is, of course, the fact that if you or your children or loved ones get cancer or leukemia, it COULD be due to anything, NO MATTER HOW CLOSE you live to a reactor, and no matter how many people around you SEEM to be dying as well. To make matters worse, after a meltdown, most people with reactor-caused illnesses will never be paid a red cent by any insurance company, the reactor owners or operators, or any local, state or federal entity. Check your homeowner's insurance policy if you have one. Reactor accidents are specifically excluded! And you need look no further than the nuclear industry's under-funded, federally-mandated minimalist insurance policy known as The Price-Anderson Act to KNOW that no citizen will be paid their due if they survive after an accident. You'll get fractions of a penny on the dollar if you live to collect anything at all. You'll be called stupid for living so close to a reactor, or paranoid for thinking that accident "X" miles away caused YOUR cancer. "X" could be a little as 11 miles or less!

15) Is the threat from terrorism real?

YES, IT'S REAL. There have been NUMEROUS threats from terrorists against OUR nuclear power plants. Books by scientists, written more than 30 years ago, which were ignored then and are ignored now, warned America of the threat. The threat is worse now: The militants are at least as determined as ever, the targets contain MORE radioactive materials than ever, the populations around the reactors are vastly greater, and the explosive power and penetrating power of the weapons that might be used are both SIGNIFICANTLY greater. But the reactors are the same, only older!

A half-dozen armed guards per reactor won't stop ANY determined foe. Similarly, the Transportation Security Administration is incapable of guarding the skies completely, especially from RENTED BUSINESS JETS which could be easily hijacked and flown into a reactor or its spent fuel, with devastating results.

The Pentagon does NOT patrol the airspace above each reactor and even if it did, they couldn't stop the wide variety of incoming flying objects that can exist --

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missiles, small and large planes, etc.. They can't stop boat-launched small nuclear weapons attacks against our coastal reactors. They couldn't stop 9-11; not even close.

The military has NOT built anti-aircraft missile embankments around the nuclear power plants or even established permanent "no-fly" zones around the plants. And even if they did, it probably wouldn't help against a determined, 9-11 "inspired" foe.

Shutting the reactors down permanently improves the survivability significantly. Nothing else makes any sense at all.

16) Are people who oppose nuclear power simply opposed to ALL technology?

No usually, and not in this case. Most of them are just like everyone else. They like baseball, they want their car to be first off the line at the light, they like rock and roll music.

But there is ONE big difference: They've studied up on some of the issues presented here. So they've decided -- on their own -- that nuclear power is a silent killer, and that its corporate and government proponents are liars, cheats, scoundrels, and -- yes -- murderers.

But that is no reason to hate "technology." Nuclear technology is generally 50-year old, has-been stuff anyway. Renewable energy is where all the exciting, great work is being done these days. In fact, most people who oppose nuclear technology think that GOOD technology can and MUST enrich and lengthen our lives.

The author of THIS document has been a computer programmer for more than 25 years. He has programmed everything from lasers to classroom lessons, robots, mice, and joysticks. It's easy to label someone "anti-" and figure they just have an ax to grind. But the reality can be quite different. The author considers himself not only "pro-technology" but "pro-DNA," instead of the more common phraseology: "anti-nuclear." The term pro-DNA is correct because the damage to our DNA is the most dangerous thing we have to deal with regarding radioactive poisons in our midst. DNA damage is also among the hardest problems to detect. This essay is a demand for scientific, humanitarian, democratic and financial JUSTICE, nothing more, nothing less.

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